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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NEGRON, ISMAEL

ART UNIT PAPER NUMBER

2875

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/038,603

Applicant(s)

DOE, STEVEN

Examiner

Ismael Negron

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10-14 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-14 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20040426.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's after-final amendment filed on April 28, 2004 has been entered.

Claims 1, 10-12 and 17 have been amended. Claims 8, 9, 15, 16 and 18 have been cancelled. No claim has been added. Claims 1-7, 10-14 and 17 are still pending in this application, with claim 1 being independent.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 is indefinite as it is not clear if the claimed radiation source is a point-like source (as recited in claim 1) or a planar source (as recited in claim 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2875

3. Claims 1-5, 7, 10-14 and 17 are under 35 U.S.C. 103(a) as being unpatentable over TSAI (U.S. Pat. 5,739,879) in view of MATSUI et al. (U.S. Pat. 5,021,931).

TSAI discloses a backlighting device for LCD, such device having:

- **a radiation source**, Figure 6, reference number 66;
- **a layer associated with the radiation source**, Figure 6, reference number 65;
- **a light guide**, Figure 6, reference number 60;
- **the layer containing a matrix of particles that emit visible light in response to the radiation source**, column 6, lines 16-24;
- **the radiation source emitting invisible light**, column 8, line 22;
- **the radiation source emitting ultra-violet light (UV light)**, column 4, line 22;
- **the layer containing a matrix of phosphors or fluorescent particles**, column 8, lines 24-44;
- **the particles being distributed to provide uniform light intensity**;
- **the particles being of a single color**, column 6, lines 52-58;
- **the particles being of different colors**, column 6, lines 52-58;
- **a reflector disposed on the layer**, column 6, lines 45-47; and
- **an LCD**, column 5, lines 55-60.

Art Unit: 2875

TSAI discloses all the limitations of the claims, except the layer being included in the light guide, the matrix being embedded in the light guide, or the radiation source being a point-like source.

MATSUI et al. discloses an apparatus for backlighting display panels, such light guide having:

- **a light guide**, Figure 2, reference number 10;
- **the light guide having a matrix of particles embedded therein**, column 2, lines 19-27; and
- **the particles emitting light in response to stimulating light**, column 2, lines 19-27.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combined the teachings of MATSUI et al. with the device of TSAI to increase the efficiency and intensity of the backlighting device, while at the same time reducing its thickness, as per the teachings of MATSUI et al. (see column 2, lines 54-64).

In addition, the Examiner takes Official notice of MATSUI et al. statement regarding the old and well known in the art status of using fluorescent and/or phosphorescent particles to increase the efficiency of backlighting devices for image display systems (see column 1, lines 11-32).

Regarding the radiation source being a point-like source, the examiner takes Official Notice that the use of LEDs is old and well known in the illumination art. It would have been obvious to one of ordinary skill in the art at the time the invention was made

Art Unit: 2875

to substitute an LED for the radiation source in the system of TSAI. One would have been motivated since LEDs are recognized in the illumination art to have many desirable advantages, including reduced size, high efficiency, low power consumption, long life, resistance to vibrations, and low heat production, over other light sources.

4. Claims 1, 5, 14 and 17 are under 35 U.S.C. 103(a) as being unpatentable over SANYO ELECTRIC (European Patent Application No. 0-283-014) in view of MATSUI et al. (U.S. Pat. 5,021,931).

SANYO ELECTRIC discloses a backlighting device for LCD, such device having:

- **a radiation source**, Figure 3, reference number 2;
- **the radiation source being a planar source**, Figure 1;
- **a layer associated with the radiation source**, Figure 1, reference number 12;
- **the layer containing a matrix of particles that emit visible light in response to the radiation source**, column 6, lines 54-57; and
- **a liquid crystal display**, Figure 3, reference number 4.

SANYO ELECTRIC discloses all the limitations of the claims, except the layer being included in a light guide, or the radiation source being a planar source.

MATSUI et al. discloses an apparatus for backlighting display panels, such light guide having:

- **a light guide**, Figure 2, reference number 10;
- **the light guide having a matrix of particles embedded therein**, column 2, lines 19-27; and

Art Unit: 2875

- **the particles emitting light in response to stimulating light,**
column 2, lines 19-27.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combined the teachings of MATSUI et al. with the device of SANYO ELECTRIC to increase the efficiency and intensity of the backlighting device, while at the same time reducing its thickness, as per the teachings of MATSUI et al. (see column 2, lines 54-64).

In addition, the Examiner take Official Notice of SANYO ELECTRIC's statements regarding the old and well known in the art status of planar light sources for back illuminating LCD panels (see column 1, lines 27-37).

Relevant Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Toshiba (JP 63015221), **Do et al.** (U.S. Pat. 5,608,554), **Nichia Chemical** (JP 10154830) and **Flynn** (U.S. Pat. 5,815,228) disclose LCD panels having fluorescent materials excited by radiation sources for providing back illumination of the LCD panel.

Response to Arguments

5. Applicant's arguments with respect to claims 1-7, 10-14 and 17 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2875

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negrón whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached on (571) 272-2378. The facsimile machine number for the Art Group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.


Inr

June 4, 2004


THOMAS M. SEMBER
PRIMARY EXAMINER